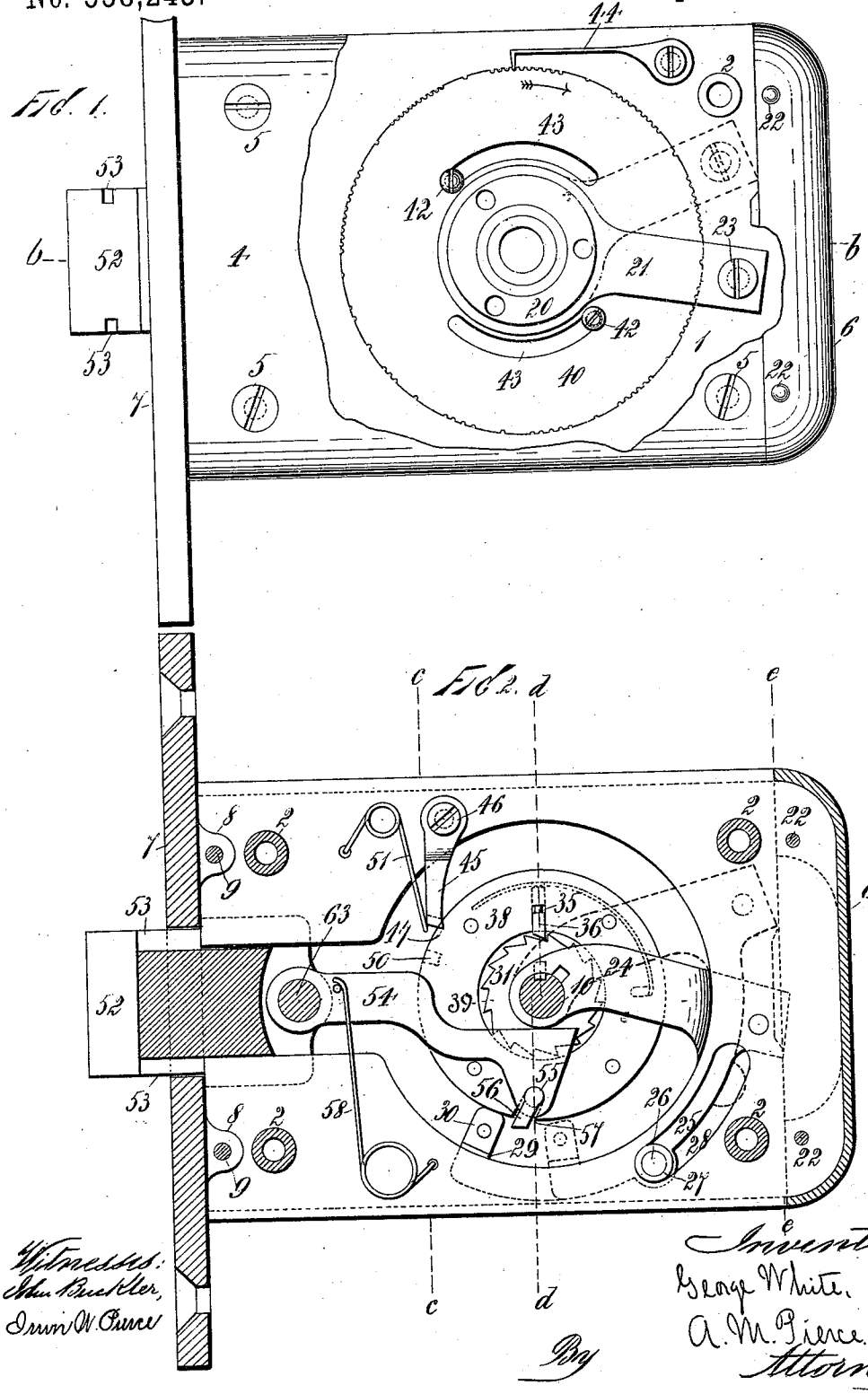
(No Model.) 3 Sheets—Sheet 1.

G. WHITE.

LOCK.

No. 558,243. Patented Apr. 14, 1896.



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(No Model.) 3 Sheets—Sheet 2.

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FIG. 3.

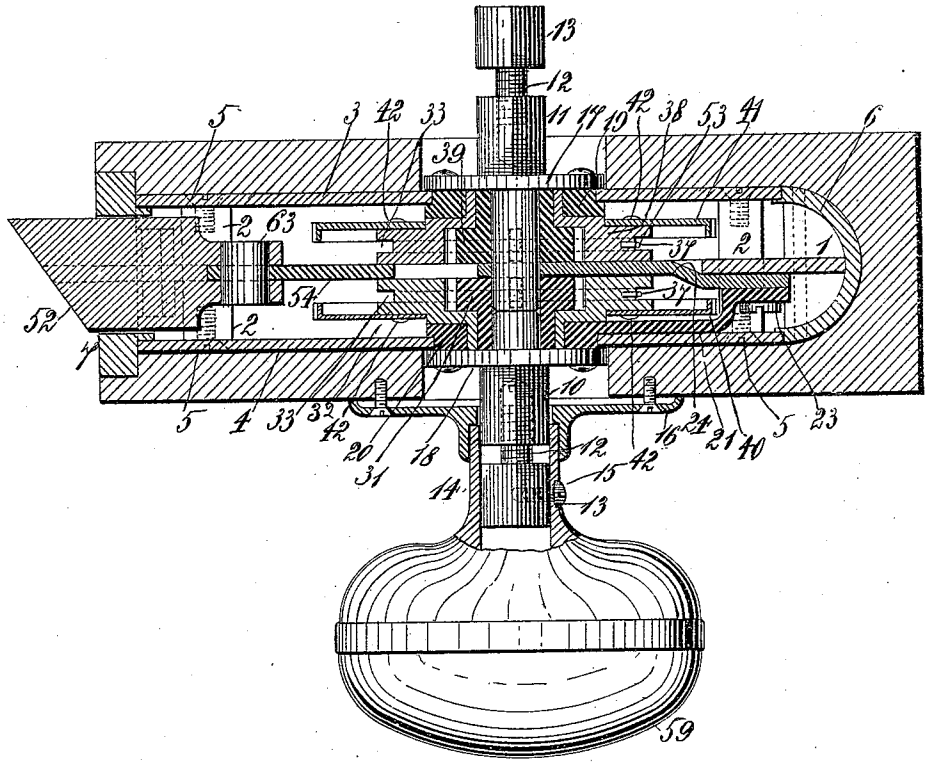
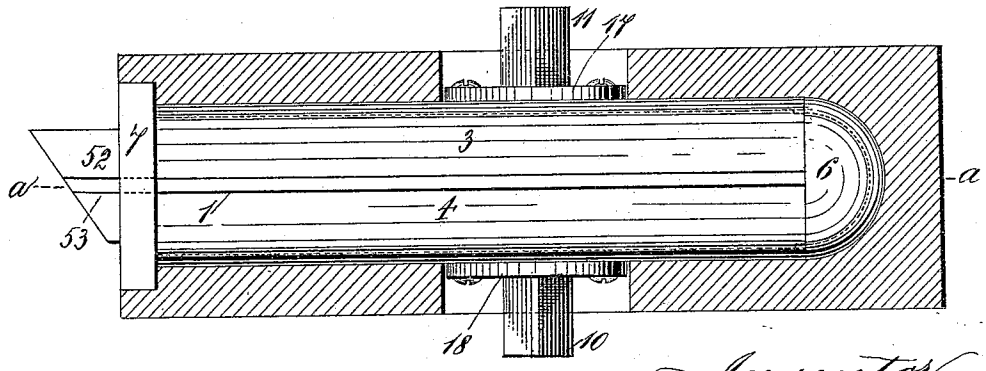


FIG. 4.



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(No Model.) 3 Sheets—Sheet 3.

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FIG. 5.

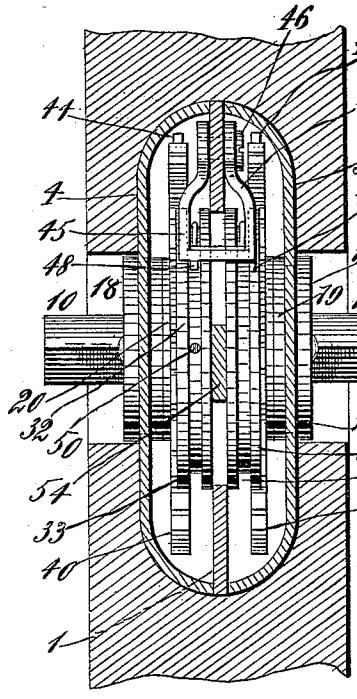


FIG. 6.

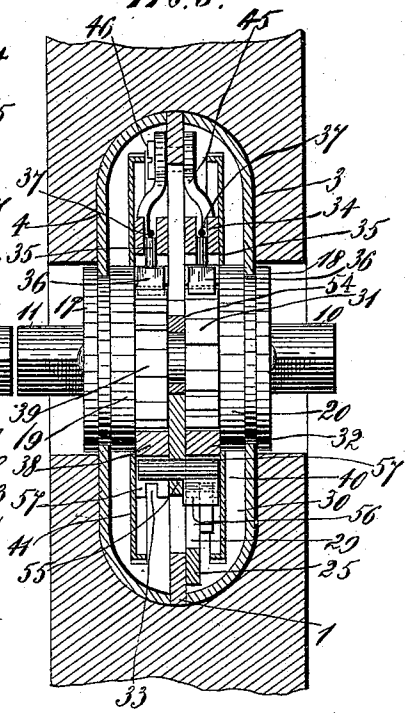
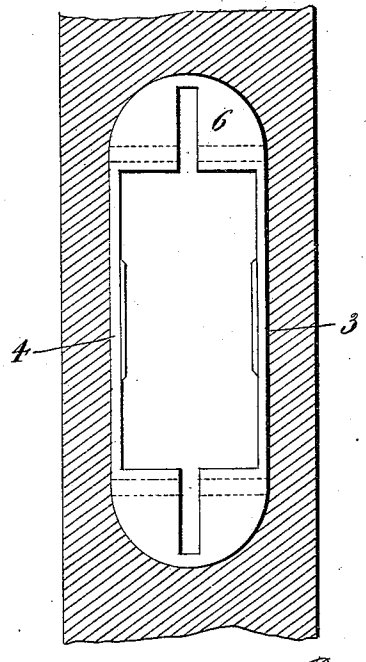


FIG. 7.



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UNITED STATES PATENT OFFICE.

GEORGE WHITE, OF BROOKLYN, NEW YORK, ASSIGNOR TO OLIVER M. FARRAND, OF NEW YORK, N. Y.

LOCK.

SPECIFICATION forming part of Letters Patent No. 558,243, dated April 14, 1896.

Application filed August 18, 1893. Serial No. 483,438. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WHITE, a citizen of the United States, residing in Brooklyn, Kings county, and State of New York, have invented a new and useful Improvement in Locks, of which the following is a specification.

My invention relates especially to locks for house-doors and kindred purposes, and has for its object the provision of a lock of simple, compact construction, easy to apply, wherein a key is dispensed with and the unlocking and proper manipulation of the parts attained by the use of the senses of touch and sound.

To accomplish the desired end my invention consists in certain novel and useful combinations or arrangements of parts and peculiarities of construction and operation, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my lock, the knob, spindle, and a portion of the lock-shell being removed. Fig. 2 is a vertical sectional view at line *a a* of Fig. 4. Fig. 3 is a horizontal sectional view at line *b b* of Fig. 1, the knob, spindle, and shell being in place. Fig. 4 is a top view of the lock in place in a door, the door being shown in section. Fig. 5 is a vertical cross-sectional view of the lock at line *c c* of Fig. 2, looking from the left. Fig. 6 is a like view at line *d d* of the same figure, looking from the right. Fig. 7 is a like view at line *e e* of the same figure, looking from the left.

Similar numerals of reference wherever they occur indicate corresponding parts in all the figures.

1 is a central plate, to which the several parts of the lock are attached. This plate is provided with perforated studs 2, to which the portions 3 and 4 of the outer shell are secured by means of screws 5.

6 is a cap closing the inner end of the shell held to the central plate 1 by rivets 22.

7 is the front plate of the lock, secured by means of ears 8 and rivets 9 to the central plate 1. The central portion of the plate 1 is cut out, as particularly indicated in Fig. 2.

The knob-spindle is composed of two parts 10 and 11, each screw threaded for the reception of a screw 12, projecting from an extension 13 of the spindles, this projection being arranged to receive a knob-shank 14 held in place by means of a screw 15. 16 is a rose of the usual construction. By this arrangement the spindle can be shortened or lengthened to suit the thickness of the door wherewith the lock is employed and the use of the usual cumbersome washers dispensed with.

Formed with or secured to each spindle 10 and 11 are flanged plates 17 and 18. To the plate 17 is secured a washer 19, passing through a perforation in the outer shell of the lock, being held in place by the plate 17 and a flange on its inner side. 20 is a washer of similar construction and arrangement upon the opposite side of the lock. This washer 20 is provided with an arm 21, extending backward and engaging by means of a screw 23 with an arm 24, extending to the center of the lock where it encircles the spindle 11. Projecting from the arm 24 and having its inner edge substantially following the curve of the cut-out portion of the inner plate 1 is an arm 25, whereon is a stud 26, bearing a friction-roller 27, arranged to play in a guiding-slot 28 in the plate 1. Upon the extremity of the arm 25 is a finger 29, having a reinforcing-piece 30 secured thereto.

31 is a ratchet-wheel secured upon the inner end of the spindle 11. Surrounding said ratchet-wheel is a disk 32, having a circumferential groove 33 therein, and a radial perforation 34 wherein plays the stem 35 of a dog 36, arranged to engage with the teeth of the ratchet-wheel 31.

37 is a spring for holding the dog in engagement with the ratchet-wheel.

38 is a disk similar to disk 32, arranged as above set forth upon the side of the plate 1 opposite thereto, and 39 is a ratchet-wheel corresponding to ratchet-wheel 31, but having its teeth reversed in position.

40 and 41 are circular index-plates secured to the disks 32 and 38 by means of screws 42, passing through slots 43, as particularly illustrated in Fig. 1, this arrangement permitting the circular adjustment of the plates. The plates 40 and 41 are provided with notches upon their edges, wherein a dog 44 is arranged to drop.

45 is a dog pivoted to a screw 46, passing through the plate 1, said dog being arranged to enter a notch 47 in the disk 38.

48 is a finger upon said dog, which enters the groove 33 in the disk 32 and raises said dog through the medium of a pin 50, fixed in the groove 33 when the disk 32 is turned.

51 is a spring arranged to press the dog 45 in engagement with the notch in the disk 38.

52 is the nose of the lock-bolt, said bolt being grooved top and bottom at 53, the edges of the cut-away portion of the plate 1 entering said grooves and guiding the bolt, as particularly shown in Fig. 2. The bolt may be reversed in position in accordance with the desired use of the lock for either a right-hand or left-hand door. Secured to the inner end of the bolt 52 upon a pin 63 is an arm 54, having its inner portion curved in such a manner as to pass beneath the knob-spindle. At the lower extremity of this arm 54 is located a pin 55, extending through a slot 57 in both the disks 32 and 38 when the parts of the lock are in the position shown in the drawings.

56 is a tongue projecting downward at one extremity of the pin 55, arranged to come in contact with the finger 30.

58 is a spring, which normally throws the arm 54 outward and upward.

59 is the knob upon the inside of the door.

When constructed and arranged in accordance with the foregoing description and the parts assembled for use in a door, the operation of my lock is as follows: The parts being in the position shown in the drawings, by turning the inner knob the arms 21 and 24 will be moved, as shown by dotted lines in Fig. 2, and the arm 25 moving therewith will bring the finger 29 30 in engagement with the tongue 56, drawing back the arm 54 and the bolt 52. When the parts are in the position shown and the outer knob is turned, the two disks 32 and 38, being held by the pin 55, will turn in unison and retract the lock-bolt. This movement of the disks, if continued, will throw the pin 55 out of the slots 57, and said pin will ride upon the peripheries of the disks; but the spring 58 will throw the bolt back to a locked position when the pin 55 is released from engagement with the slots in the disks. If the outer knob is now turned, it will only move the outer disk, and the slots 57 will cease to register and the lock-bolt cannot be retracted again from the outside of the door until the disks 32 and 38 are again brought into the proper position. This is accomplished as follows: The operator first turns the outer knob until the pin 50 in the groove 33 strikes against the finger 48 upon the dog 45, thus raising the said dog out of engagement with the notch 47 in the other disk, the position of said parts being known by the clicks of the dog 44 upon the index-plate. After this has been accomplished, he listens to the clicks made by the dog 44 as it passes over the notches in the index-plate 40, said plate having been so set that when a certain notch is reached the slot 57 in the disk 32 will be in position to permit the pin 55 to drop therein. This pin is still riding upon the periphery of the other disk 38, and it is now necessary to reverse the movement of the knob, which leaves the inner disk and plate stationary, and by listening to the clicks of the dog passing over the notches in the index-plate 41 the disk 38 is turned to the proper position to permit the pin 55 to drop into the slot 57 in said disk, when by continuing the rotation of the knob in the proper direction the bolt of the lock will be retracted. By adjusting the plates 40 and 41, as hereinbefore described, the notches in which the dog 44 must necessarily fall to place the slot in the attached disk in the proper position for retracting the bolt may be varied at pleasure and a great variety of combinations used in the lock.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a lock of the character herein specified, an interior index-plate, connected to the knob-spindle, the periphery of said index-plate being slightly notched to indicate consecutive numbers, in combination with independently-movable disks, one of which bears a pin upon its periphery, and a dog arranged to engage with a notch in said disk, and be thrown out of engagement with the pin in the other disk, substantially as shown and described.

2. In a lock of the character herein specified, the combination with the divided spindle, bearing manipulating-knobs, of two ratchet-wheels mounted upon one portion of the spindle, as set forth; two notched disks provided with dogs arranged to engage with the teeth of the ratchet-wheels; notched index-plates mounted upon said disks; dogs adapted and arranged to enter the notches in the plates; a lock-bolt provided with an arm bearing a pin arranged to enter the notches in the first-mentioned disks, and an arm connected to the lock-spindle, and bearing a finger arranged to come in contact with the pin in the bolt-retracting arm, substantially as shown and described.

3. In a lock of the character herein specified, the combination with the independently-movable notched index-plates, of disks to which said plates are secured; ratchet-wheels mounted upon the lock-spindle; dogs connected with the ratchet-wheels and with the surrounding plates, and connections between the lock-bolt and the knob-spindle, substantially as shown and described.

4. In a lock of the character herein specified, the combination with the independently-movable disks, one of which bears a pin upon its periphery, of a dog, arranged to engage with the notch in the disk, and be thrown out of engagement therewith by the pin in the other disk, substantially as shown and described.

5. In a lock of the character herein speci-

fied, the combination with the lock-shell, of the flanged spindles and flanged washers, arranged to hold the spindle in place in the lock-shell, substantially as shown and described.

6. In a lock of the character herein specified, the combination with the knob-spindle, of the ratchet-wheels mounted thereon, and having their teeth reversed in position, and the manipulating-disks and index-plates, and dogs borne by the disks, substantially as shown and described.

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Witnesses:
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IRVIN W. PIERCE.